

## REMARKS

Claim 1 was been amended to clarify what is meant by “maintenance” of a catalyst within a fluidized cracking catalyst (FCC) unit. Specifically, it means that the catalyst is capable of being maintained in a fluidized state in the unit. The basis for this amendment is Paragraph 21 of Applicants’ specification, which expressly states that the invention relates to catalysts having a fine powdery size such that the catalyst can achieve a fluid like state when aerated with gas. This amendment is being made solely for the purpose of clarifying the nature of the claimed subject matter and is not being made to overcome the §103 rejection discussed below. The amendment is also not being made in acquiescence or concurrence with statements made in the **Response to Arguments** section of the March 23, 2007 Office Action. For example, it is not seen how one of ordinary skill would construe Applicant’s claims to cover material having the size of a tennis ball. It is submitted that Applicants’ recitation of the catalyst being capable of maintenance in a FCC unit and Applicants disclosure in Paragraph 21 clearly set forth sufficient description on this point.

### §103 Rejection Based on Nakaoka

The March 23, 2007 Office Action has maintained a §103 rejection based on Nakaoka (US 5,686,374). Applicants however respectfully request reconsideration and withdrawal of this rejection.

Applicants submit that Nakaoka does not teach a catalyst composition comprising 0.20 weight % less Na<sub>2</sub>O in combination with a Lewis Acid-containing component. Nakaoka discloses on Col. 2, line 52 through Column 3, line 7, subjecting its Y type zeolite to “dealkalization” to reduce the Y zeolite’s alkali content to 0.5% by weight or less. Otherwise a zeolite having an alkali metal content exceeding 1% by weight tends to undergo fatal destruction of its crystal structure through subsequent treatments. It is submitted that the teachings herein are directed to the issues relating to the zeolite Y. There is no teaching with respect to the alkali

levels of the catalyst composition as a whole. It is submitted that alkali, e.g.,  $\text{Na}_2\text{O}$ , contamination can occur through other components or processes used to make the final catalyst, and therefore one would not necessarily arrive at Applicants' invention when following Nakaoka's teachings with respect to the alkali content of zeolite Y.

It is also stated in the March 23, 2007 Office Action that even though Nakaoka does not disclose that any of its components contain Lewis acid sites, such sites must be present because Nakaoka discloses components that are the same as those in Applicants' claimed invention. Applicants respectfully request reconsideration. The Office Action acknowledges that the reference does not expressly teach the presence of Lewis acidity. It should then be accepted that Nakaoka also does not teach the advantage of preparing a Lewis acid-containing catalyst (e.g., reducing gasoline sulfur). It, accordingly, should then be further accepted that Nakaoka does not motivate one of ordinary skill to further improve the performance of that undisclosed advantage by manipulating  $\text{Na}_2\text{O}$  of the catalyst composition to levels of 0.20% by weight or less. Nakaoka does not disclose the  $\text{Na}_2\text{O}$  content of the total catalyst composition. As stated earlier, Nakaoka's discussion of alkali content is limited to its content in, and its effects on, Y zeolite. Indeed, it is respectfully submitted that the effect of a catalyst's  $\text{Na}_2\text{O}$  content on a Lewis acid-containing catalysts sulfur reduction properties is not known or taught by Nakaoka. That which is not known at the time of the invention, however, cannot form the basis for rejecting the claimed invention as obvious. See, *In re Shetty*, 195 U.S.P.Q. 753, 756-57 (C.C.P.A. 1977)

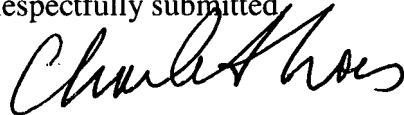
It is noted that the March 23, 2007 Office Action states that Applicants' earlier arguments relating to whether Nakaoka's teaches minimizing  $\text{Na}_2\text{O}$  was not persuasive. The statement indicates that Nakaoka fails to mention  $\text{Na}_2\text{O}$ , and therefore it must not be present. Applicants respectfully traverse. Taking such a position is speculative and unsupported by affirmative disclosure. This position is analogous to stating that it was inherent that Nakaoka eliminates the presence of  $\text{Na}_2\text{O}$  in its catalyst composition, but without pointing to any disclosure or teaching in

which such action was inherent. To the contrary, Nakaoka teaches that the Y zeolites employed in his catalysts contain alkali. Indeed, Example 1 of Nakaoka discloses employing a Y zeolite catalyst containing 12.3% Na<sub>2</sub>O. There is no disclosure or teaching by Nakaoka that he completely removed Na<sub>2</sub>O from the zeolite. In light of Example 1 and Nakaoka's teaching with respect to the manufacture of Y zeolite, it is submitted that one would assume Nakaoka's catalyst does contain Na<sub>2</sub>O.

In any event, Applicants do agree that the relevant lines of columns 2 and 3 of Nakaoka do not specifically disclose Na<sub>2</sub>O as a species of alkali to remove from zeolite Y during dealcalization. It, therefore, is submitted that this lack of teaching further highlights Applicants' position that Nakaoka does not teach minimizing Na<sub>2</sub>O content of a Lewis acid containing catalyst to improve its performance, e.g., gasoline sulfur reduction.

Accordingly, it is respectfully submitted that the claims are in condition for allowance, and Applicants request notification to that effect in the form of a Notice of Allowability.

Respectfully submitted,



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